

CLAIMS

What is claimed is:

- 5 1. A method comprising:
 - (a) sending a first announcement including first identifying information;
 - (b) sending a first content item associated with the first announcement;
 - (c) sending a second announcement including the first identifying information; and
 - (d) sending a second content item associated with the second announcement.
- 10 2. The method of claim 1 wherein:

the first and second announcements comprise first and second ATVEF announcements, respectively; and

the first and second content items comprise first and second ATVEF announcements, respectively.
- 15 3. The method of claim 2 further comprising:
 - (e) sending a first ATVEF trigger item; and
 - (f) sending a second ATVEF trigger item.
- 20 4. The method of claim 1 wherein:

the (a) sending further comprises the first announcement further including first non-identifying information;

the (c) sending further comprising the second announcement further including second non-identifying information which is different from the first non-identifying information.
- 25 5. The method of claim 4 wherein:

the first and second announcements comprise first and second ATVEF announcements, respectively;

the first and second content items comprise first and second ATVEF announcements, respectively; and
- 30

the method further comprises,

(e) sending a first ATVEF trigger item, and

(f) sending a second ATVEF trigger item.

6. The method of claim 5 wherein the first announcement is a most up-to-date version of an announcement.

7. The method of claim 4 further comprising:

sending a plurality of variants of the first announcement each including same first identifying information and different variants of the first non-identifying information; and

sending a plurality of variants of the second announcement each including same first identifying information and different variants of the second non-identifying information.

8. The method of claim 1 further comprising:

including a first version identifier in the first announcement; and

including a second version identifier in the second announcement, the second version identifier being greater than the first version identifier to cause a receiver to accept the second content item.

9. A method for a sender to preempt content of a first presentation with a second content at a receiver, comprising:

the sender sending a first announcement which includes first identifying information and first non-identifying information;

the receiver accepting the first announcement;

the sender sending the content of the first presentation;

the receiver receiving the content of the first presentation and utilizing the content of the first presentation in accordance with having accepted the first announcement;

the sender sending a second announcement which includes the first identifying information and second non-identifying information;

the sender sending the second content; and

the receiver receiving the second content and utilizing the second content in accordance with having accepted the first announcement.

10. The method of claim 9 further comprising:

the sender sending a trigger of the first presentation;

the receiver receiving the trigger of the first presentation; and

the utilizing by the receiver of the content of the first presentation is performed under control of the trigger of the first presentation.

11. The method of claim 10 further comprising:

the sender sending a second trigger;

the receiver receiving the second trigger; and

the utilizing by the receiver of the second content is performed under control of the second trigger.

12. The method of claim 9 wherein the presentation is an ATVEF presentation.

13. The method of claim 12 further comprising:

the receiver operating according to a first value of an operational characteristic upon receiving the first announcement; and

the receiver operating according to a second value of the operational characteristic upon receiving the second announcement;

wherein the operational characteristic is selected from the group comprising,

cache size,

expiration time, and

bandwidth; and

wherein the first value of the operational characteristic is specified by the first non-identifying information, and the second value of the operational characteristic is specified by the second non-identifying information.

14. The method of claim 9 further comprising:

the sender sending a third announcement which includes the first identifying information and third non-identifying information;

the sender sending third content; and

the receiver receiving the third content and utilizing the third content in accordance with having accepted the first announcement.

15. The method of claim 14 further comprising:

upon the third content ending, the receiver returning to utilizing the second content; and upon the second content ending, the receiver returning to utilizing the first content.

16. The method of claim 9 further comprising:

upon the second content ending, the receiver returning to utilizing the first content.

17. The method of claim 16 wherein the receiver returns to a point at which the first content was interrupted.

18. The method of claim 16 wherein the receiver returns to a point at which the first content would have been had the receiver not utilized the second content.

19. The method of claim 9 further comprising:

the sender including a first version identifier in the first announcement;

the sender including a second version identifier in the second announcement; and

the receiver utilizing the second content because,

the second announcement includes the same identifying information as the first announcement, and

the second announcement's version identifier indicates that the second announcement supercedes the first announcement.

20. A method of sending an ATVEF presentation comprising:

generating a first ATVEF announcement including first identifying information and first non-identifying information;

5 sending the first ATVEF announcement;
sending a first ATVEF content item and a first ATVEF trigger item;
generating a second ATVEF announcement including the first identifying information and
second non-identifying information;
10 sending the second ATVEF announcement; and
sending a second ATVEF content item and a second ATVEF trigger item.

21. The method of claim 20 wherein:
the first identifying information comprises a multicast address and port, and an ATVEF
10 announcement identifier.

22. The method of claim 20 further comprising:
including in the first ATVEF announcement a first version identifier; and
including in the second ATVEF announcement a second version identifier indicating that the
15 second ATVEF announcement supercedes the first ATVEF announcement.

23. The method of claim 20 further comprising:
generating a third ATVEF announcement including the first identifying information and third
non-identifying information; and
20 sending the third ATVEF announcement.

24. The method of claim 23 further comprising:
including in the first ATVEF announcement a first version identifier;
including in the second ATVEF announcement a second version identifier indicating that the
25 second ATVEF announcement supercedes the first ATVEF announcement; and
including in the third ATVEF announcement a third version identifier indicating that the third
ATVEF announcement supercedes the second ATVEF announcement.

25. An apparatus comprising:
30 a preemption controller;

an announcement generator coupled to the preemption controller and adapted to generate a first announcement including first identifying information and, under control of the preemption controller, a second announcement including the first identifying information;

a content switch coupled to the preemption controller and having an input for receiving a first content item and a second content item and adapted to output the first content item absent control of the preemption controller, and to output the second content item under control of the preemption controller;

an output mechanism coupled to the announcement generator and the content switch for sending the first announcement, the first content item, the second announcement, and the second content item.

26. The apparatus of claim 25 further comprising:

a trigger switch coupled to the preemption controller and having an input for receiving a first switch item and a second switch item and adapted to output the first switch item absent control of the preemption controller, and to output the second switch item under control of the preemption controller; and

wherein the output mechanism is further coupled to the trigger switch for sending the first trigger item and the second trigger item.

27. The apparatus of claim 26 further comprising:

a content store coupled to the input of the content switch to provide the first and second content items; and

a trigger store coupled to the input of the trigger switch to provide the first and second trigger items.

28. The apparatus of claim 27 further comprising:

an A/V store and sender coupled to provide audio/visual content to be sent by the output mechanism.

29. The apparatus of claim 28 wherein the apparatus comprises an ATVEF sender, the first and second trigger items comprise ATVEF triggers, the first and second content items comprise ATVEF content, and the announcements comprise ATVEF announcements.

30. The apparatus of claim 29 wherein the first identifying information comprises a multicast port and address.

31. The apparatus of claim 30 wherein the first identifying information further comprises additional identifying information which associates the first announcement with the first trigger item and the first content item.

32. The apparatus of claim 30 wherein the first announcement further comprises non-identifying information, and the second announcement further comprises non-identifying information, wherein at least a subset of the non-identifying information of the second announcement is different than a corresponding subset of the non-identifying information of the first announcement.

33. A method for a sender to preempt a receiver, the receiver configured to select between competing presentations based on an announcement stream containing announcements which provide identifying information about each of the data streams, the method comprising the sender:

sending in the announcement stream a first announcement including first identifying information;

sending a first presentation which is associated by the first identifying information with the first announcement;

copying the first identifying information into a second announcement;

sending in the announcement stream the second announcement; and

sending a second presentation which is associated by the first identifying information with the second announcement.

34. The method of claim 33 further comprising the sender:

including in the first announcement first non-identifying information;

including in the second announcement second non-identifying information which is not identical to the first non-identifying information.

35. The method of claim 34, wherein the receiver is further configured to watch for announcements having a same identifying information as that of a prior announcement for an already-accepted presentation and to accept and utilize such announcements if they bear a version identifier greater than that of the prior announcement, the method further comprising the sender:

including in the first announcement a first version identifier; and

including in the second announcement a second version identifier greater than the first version identifier.

36. The method of claim 35 further comprising the sender:

sending a plurality of variants of the first announcement;

sending a plurality of variants of the first presentation, each corresponding to a respective variant of the first announcement;

sending a plurality of variants of the second announcement; and

sending a plurality of variants of the second presentation, each corresponding to a respective variant of the second announcement.

37. The method of claim 36 wherein variants of a presentation differ in their required transmission bandwidth.

38. The method of claim 36 wherein variants of a presentation differ in their language.

39. The method of claim 36 wherein variants of a presentation differ in their cache size requirement.

40. The method of claim 35 wherein the presentations comprise audio content.

41. The method of claim 40 wherein the presentations further comprise video content.

42. The method of claim 41 wherein the announcements comprise ATVEF announcements and the presentations comprise ATVEF presentations.

43. An article of manufacture comprising:

a machine-accessible medium including instructions that, when executed by a machine, cause the machine to perform the method of claim 1.

44. The article of manufacture of claim 43 further comprising:

instructions that, when executed by the machine, cause the machine to perform the method of claim 8.

45. An article of manufacture comprising:

a machine-accessible medium including instructions that, when executed by a machine, cause the machine to perform the method of claim 9.

46. The article of manufacture of claim 45 further comprising:

instructions that, when executed by the machine, cause the machine to perform the method of claim 19.

47. An article of manufacture comprising:

a machine-accessible medium including instructions that, when executed by a machine, cause the machine to perform the method of claim 33.

48. The article of manufacture of claim 47 further comprising:

instructions that, when executed by the machine, cause the machine to perform the method of claim 35.

49. The article of manufacture of claim 48 further comprising:

instructions that, when executed by the machine, cause the machine to perform the method of claim 36.